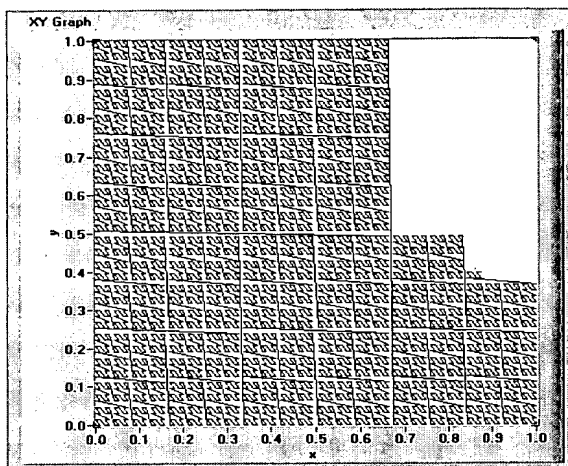
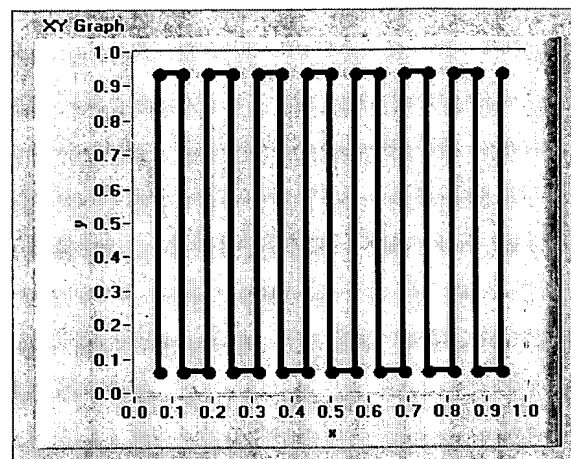


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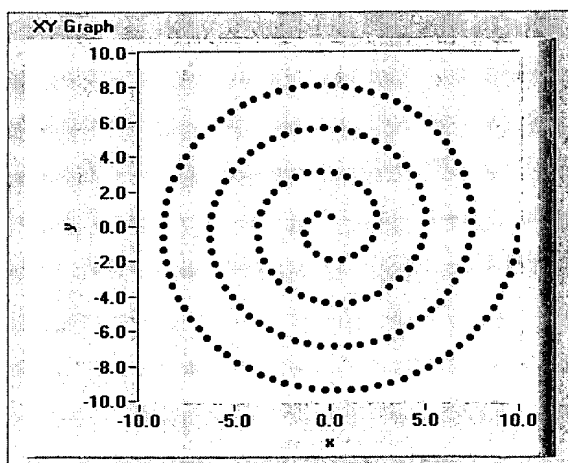
Approximated Peano Curve. The space-filling process has not been completed.

Figure 1A (Prior Art)



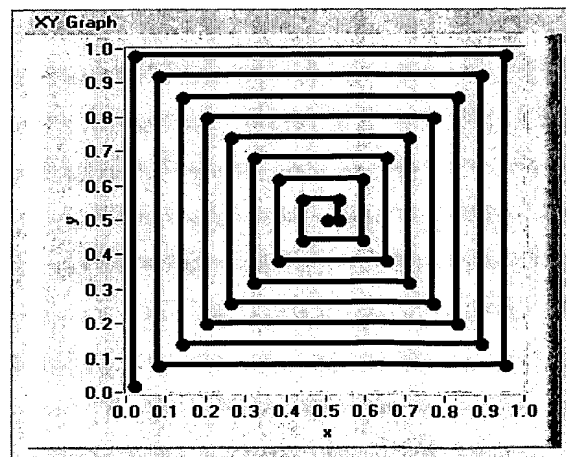
Boustrophedon Path

Figure 1B (Prior Art)



Archimedes Spiral defined by equally distributed points

Figure 1C (Prior Art)



Spiral-like line-based scanning

Figure 1D (Prior Art)

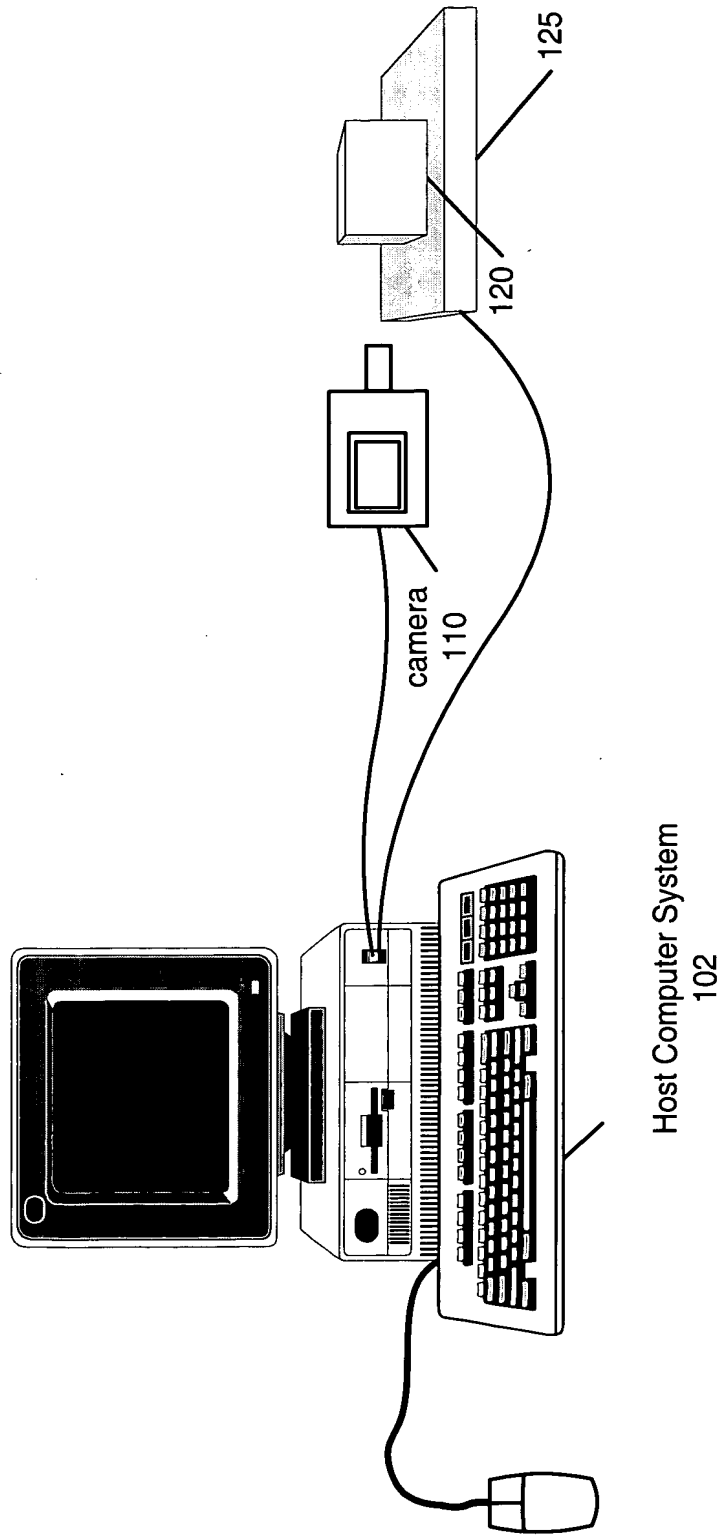


Figure 2A

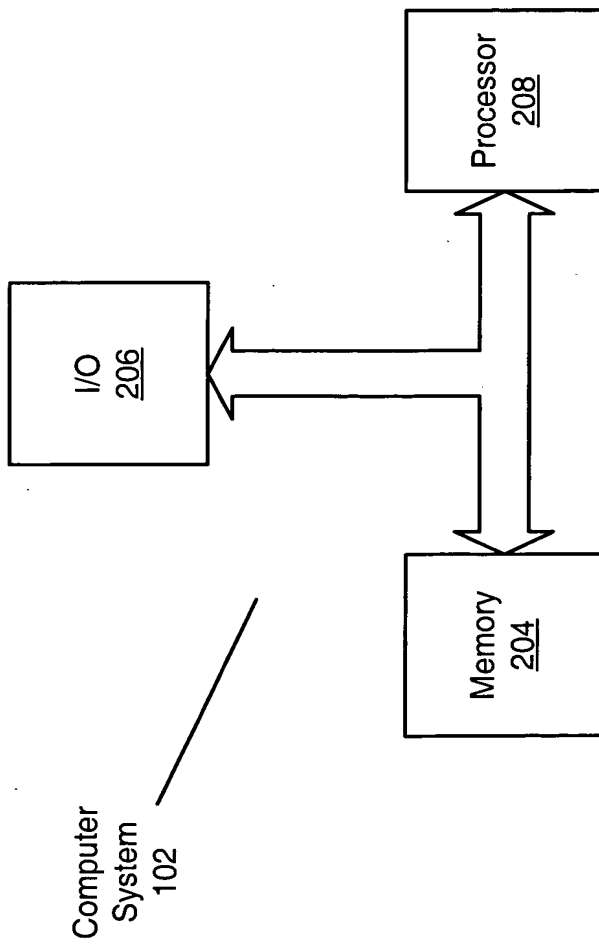


Figure 2B

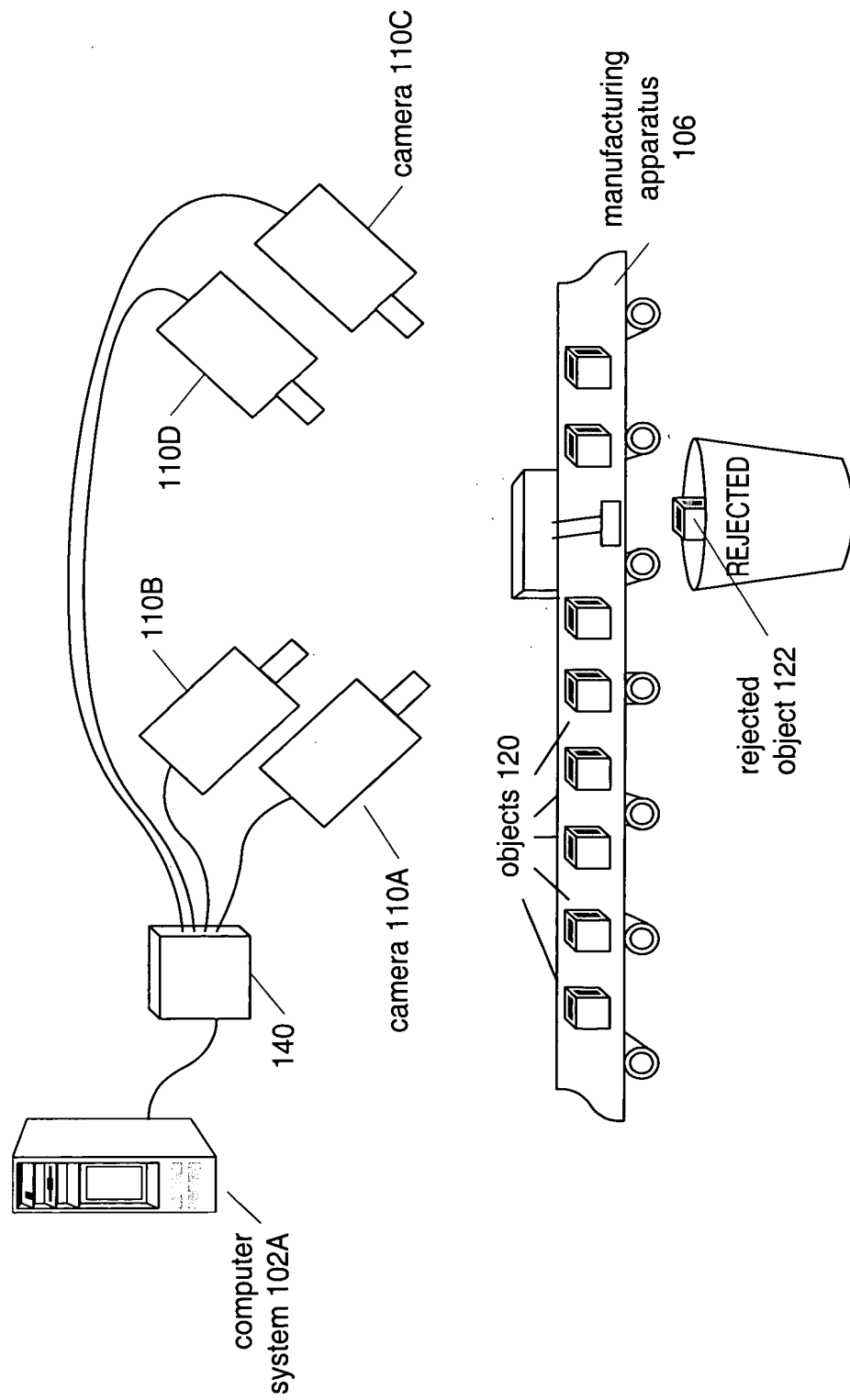


Figure 3A

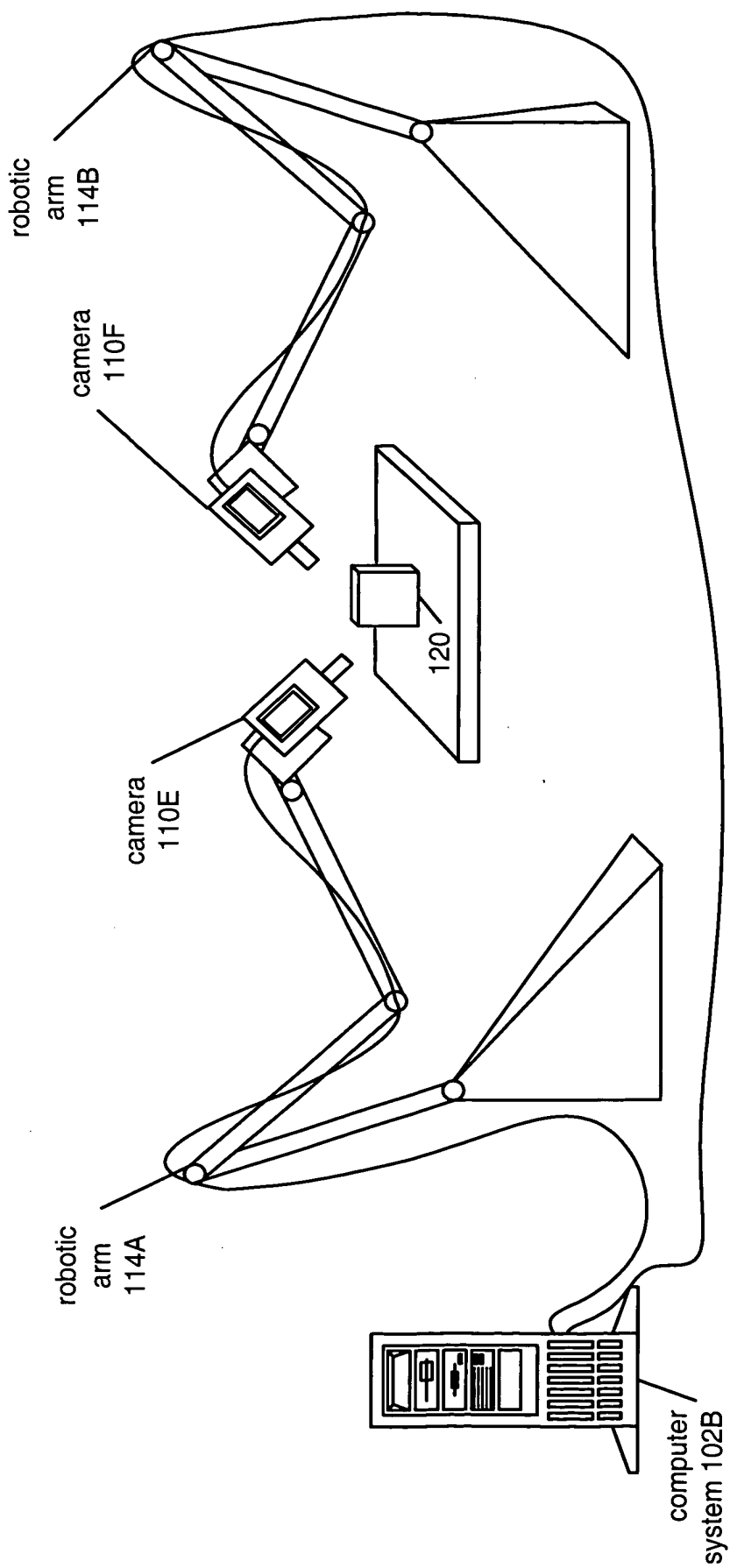


Figure 3B

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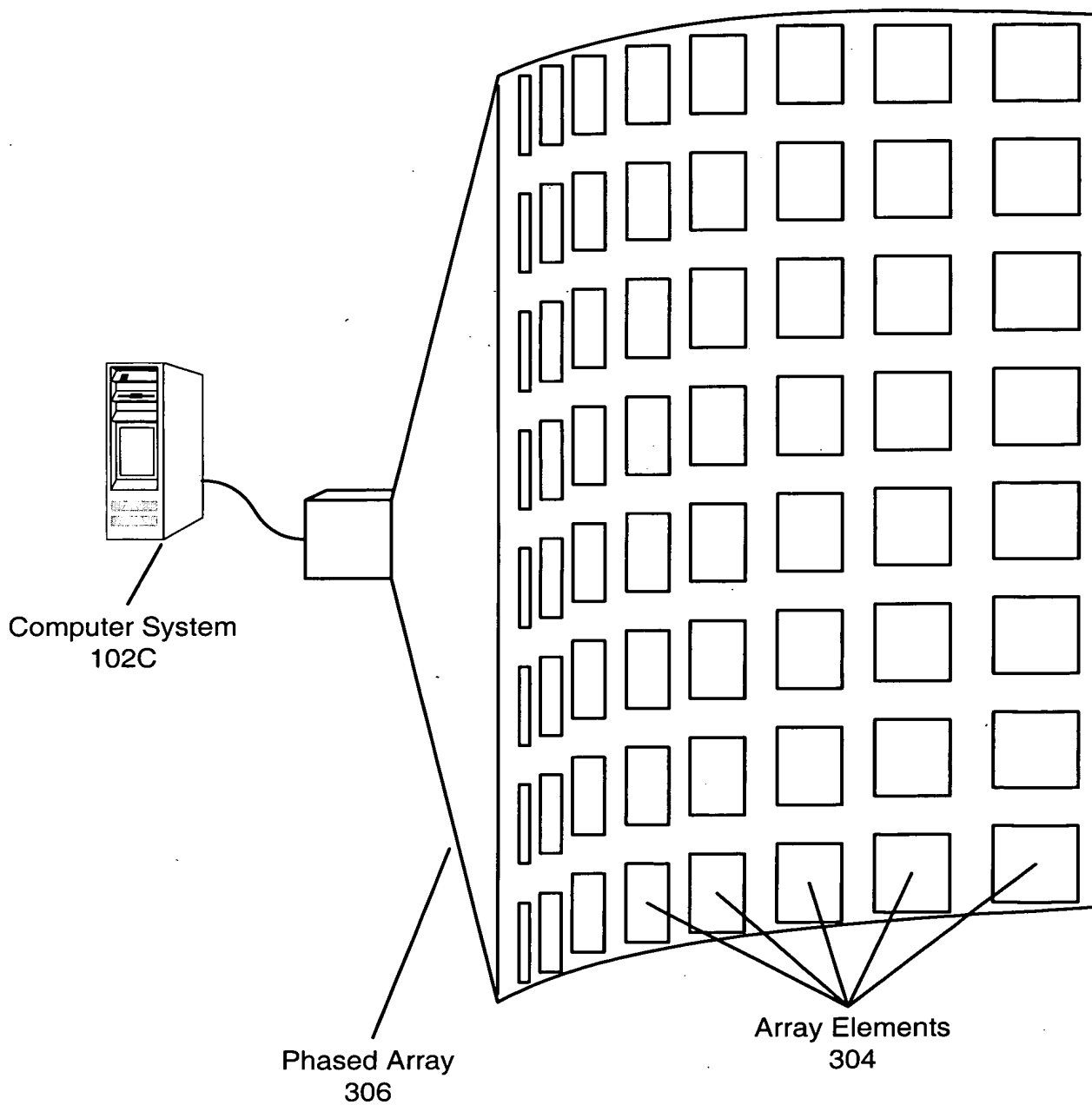


Figure 3C

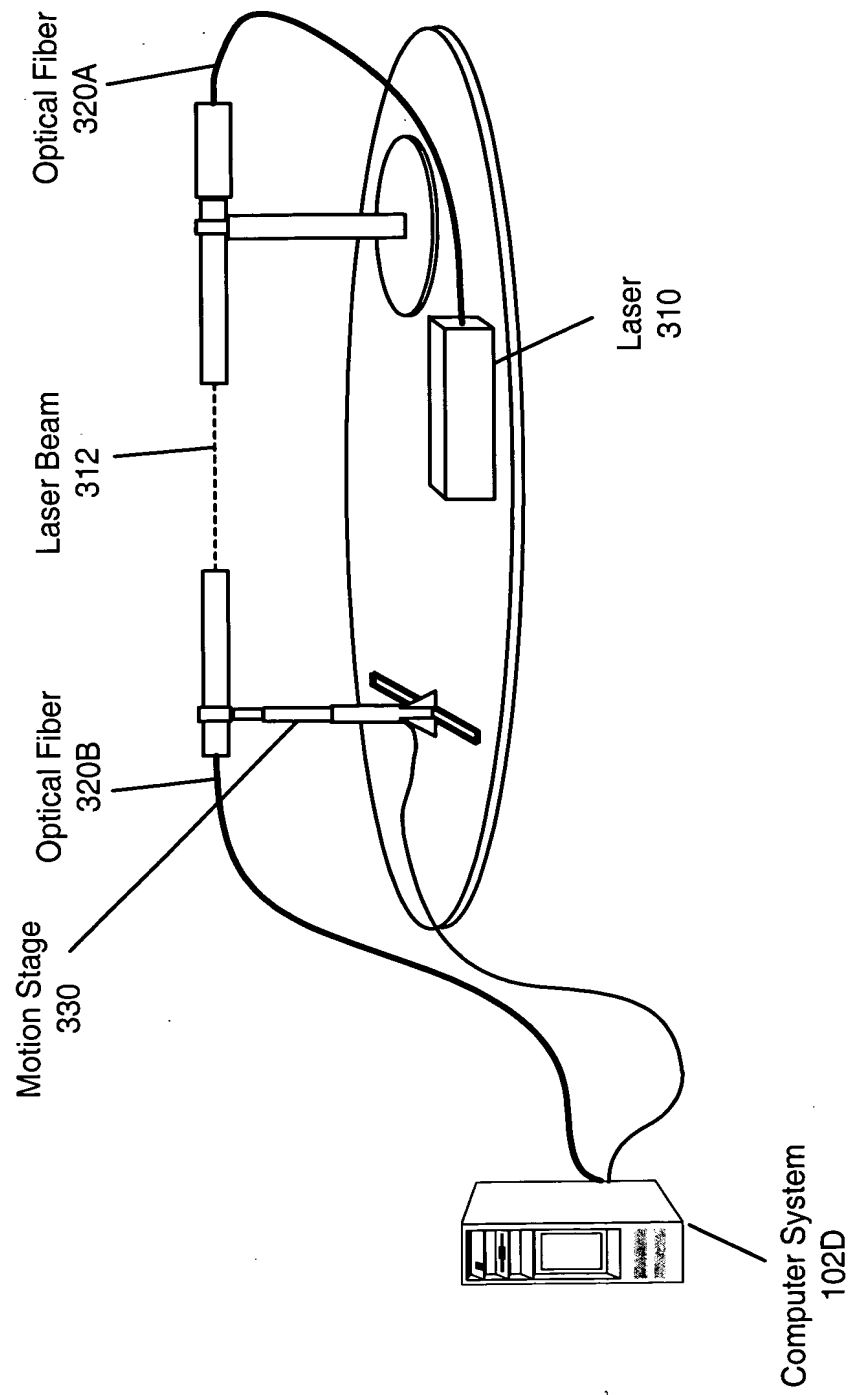
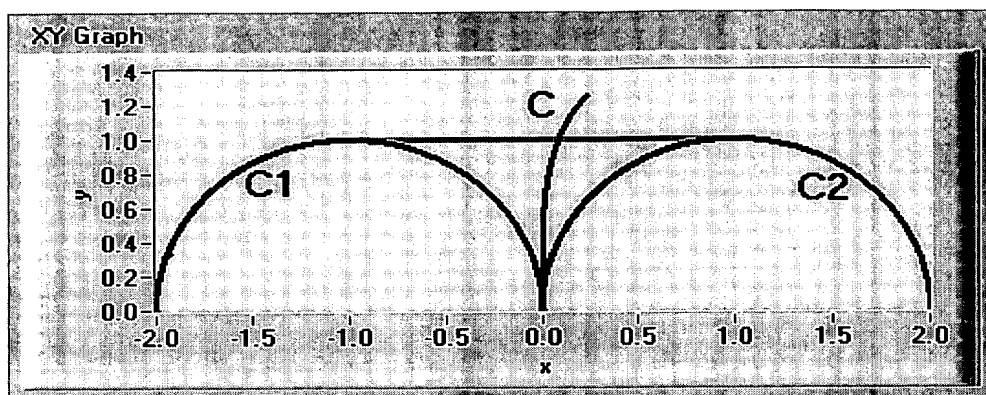


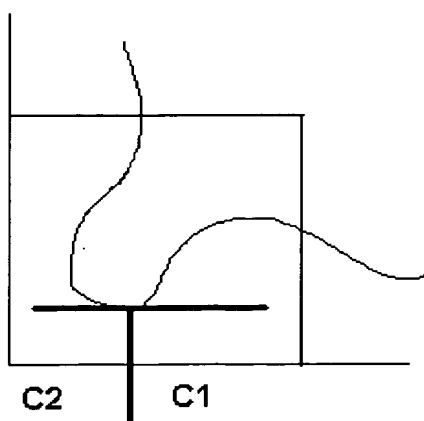
Figure 3D

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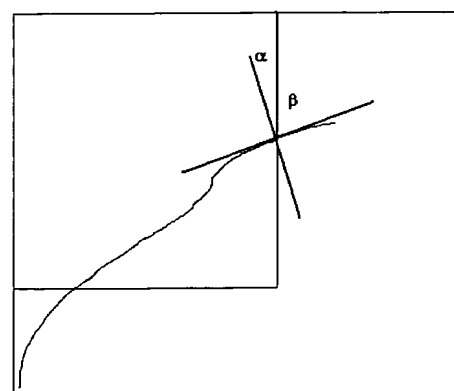
The situation of Lemma 1

Figure 4A



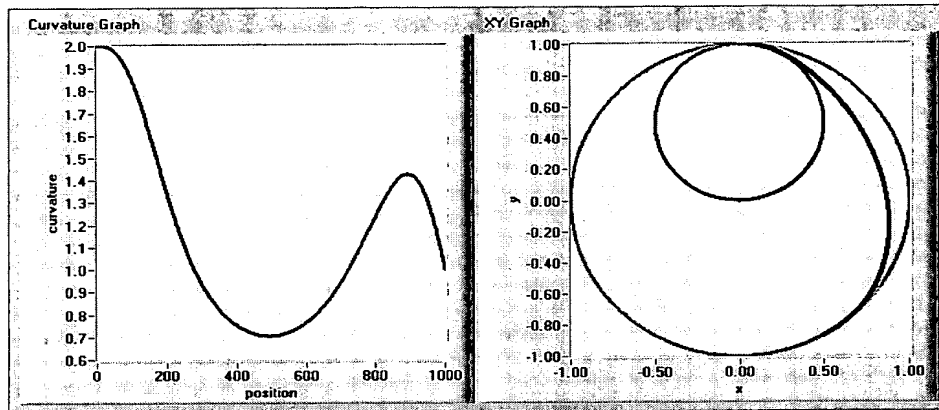
Case (A)

Figure 4B

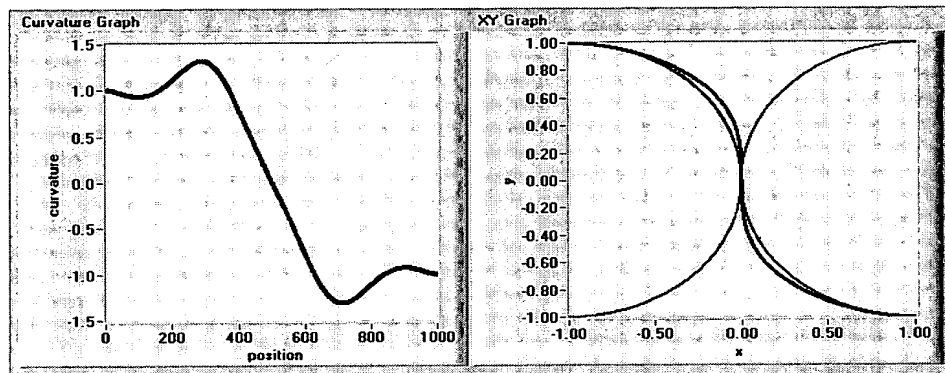


Case (B)

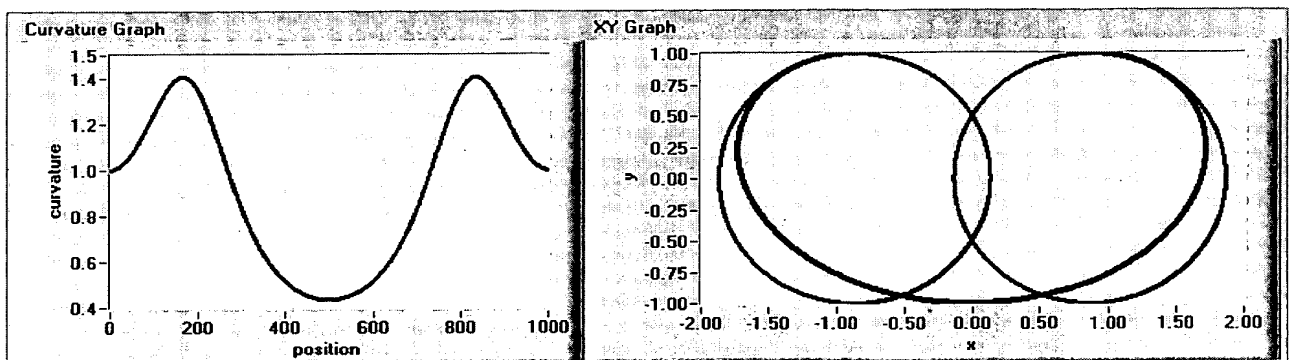
Figure 4C



Smooth transition between two circles of different radii.
Figure 4D



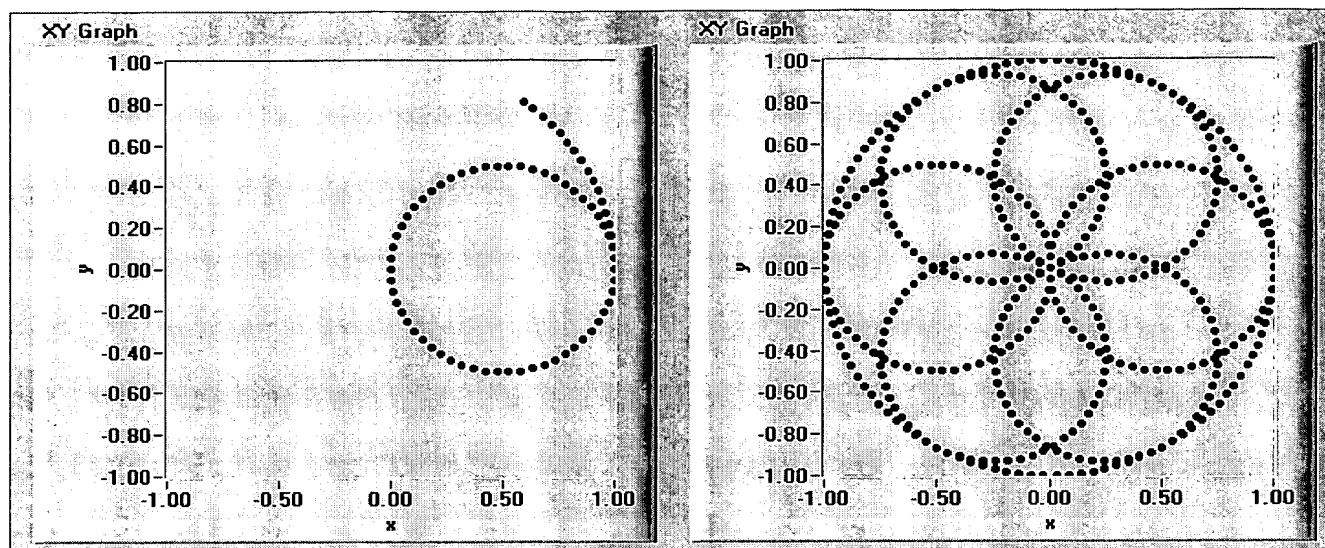
Smooth transition between two circles of same radius.
Figure 4E



Transition between two unit circles of radius 1. The distance between the circles is $\sqrt{3}$

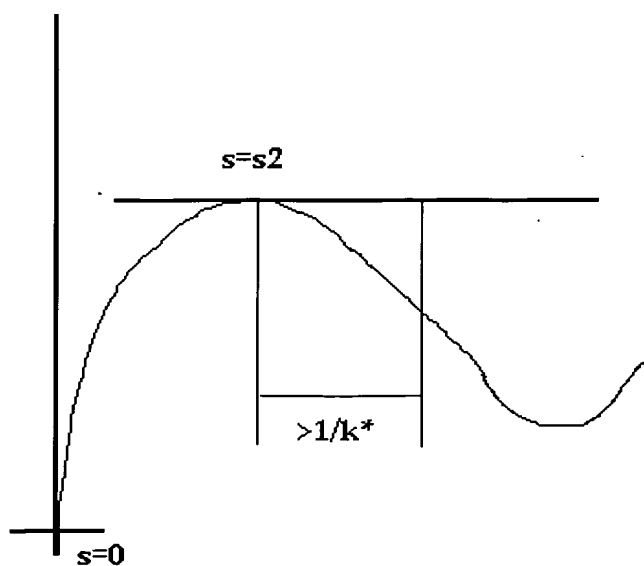
Figure 4F

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Beginning (left) and completion (right) of a scanning scheme where the curvature is below a certain value

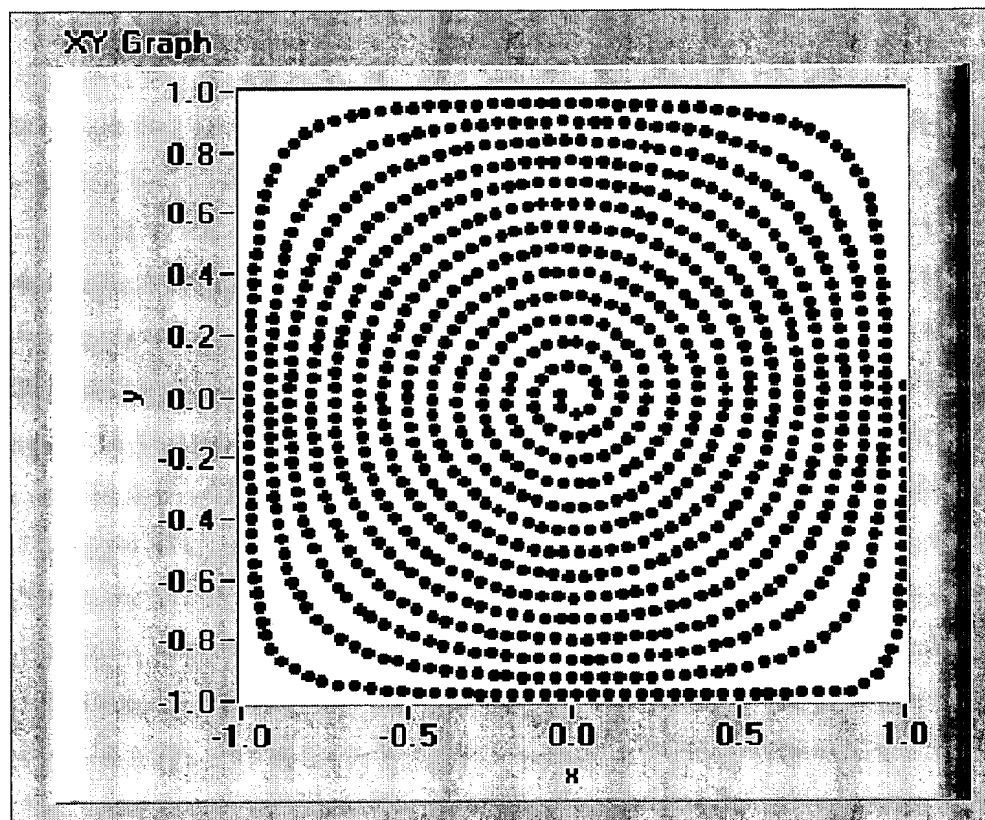
Figure 5A



Construction of s_2 and the subsequent part of the curve

Figure 5B

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Conformal Spiral.

Figure 6

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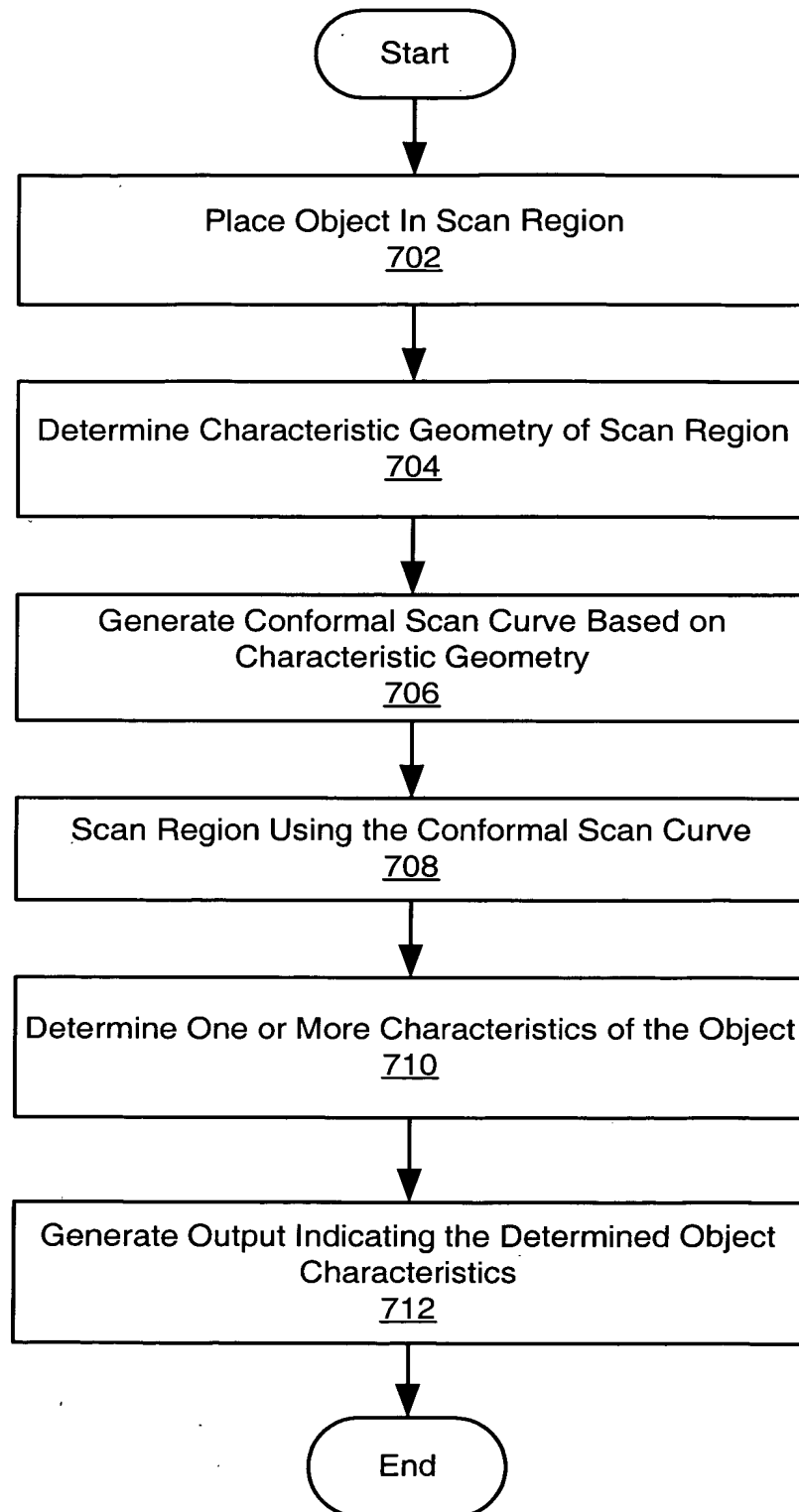
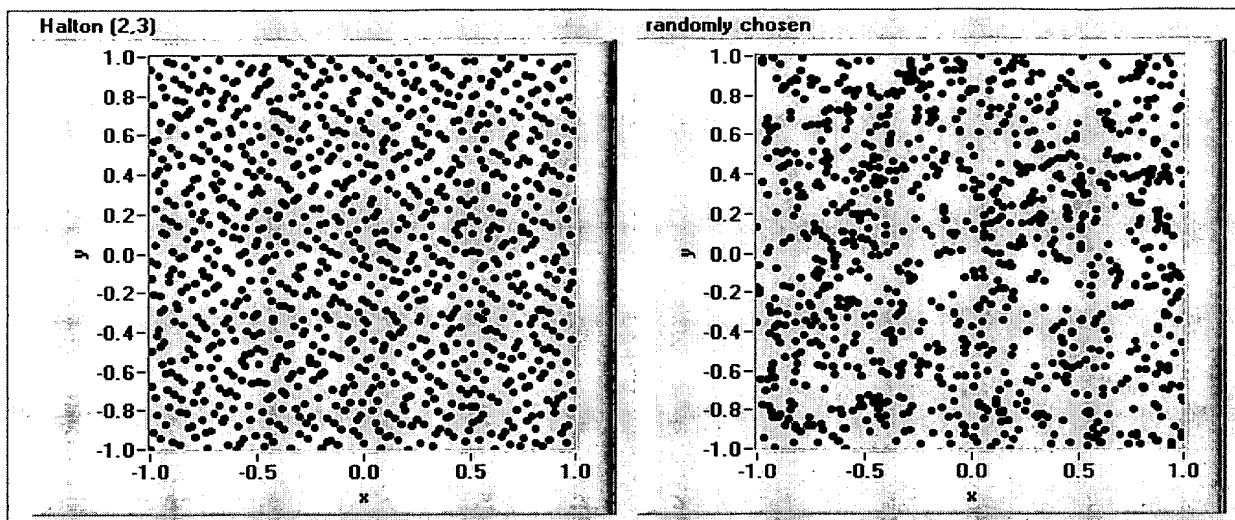


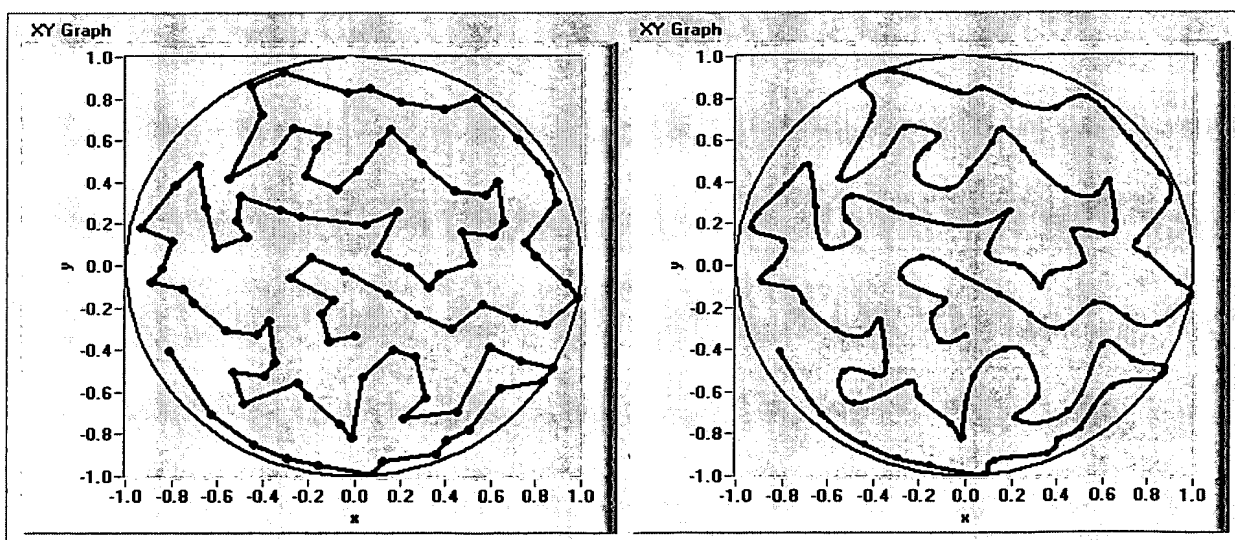
Figure 07

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The first 1000 Halton points (left) and randomly chosen points (right)

Figure 8A



Original solution (left) and splined version (right).

Figure 8B

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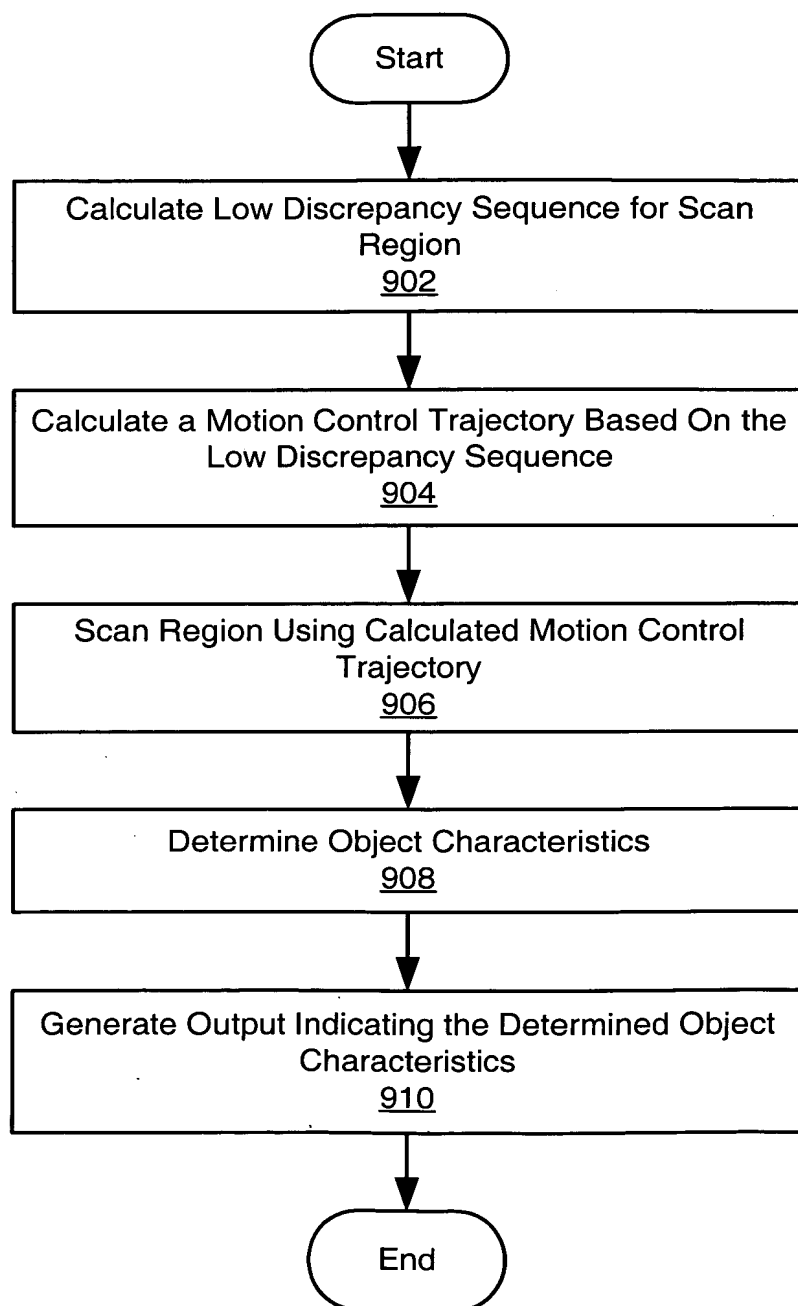
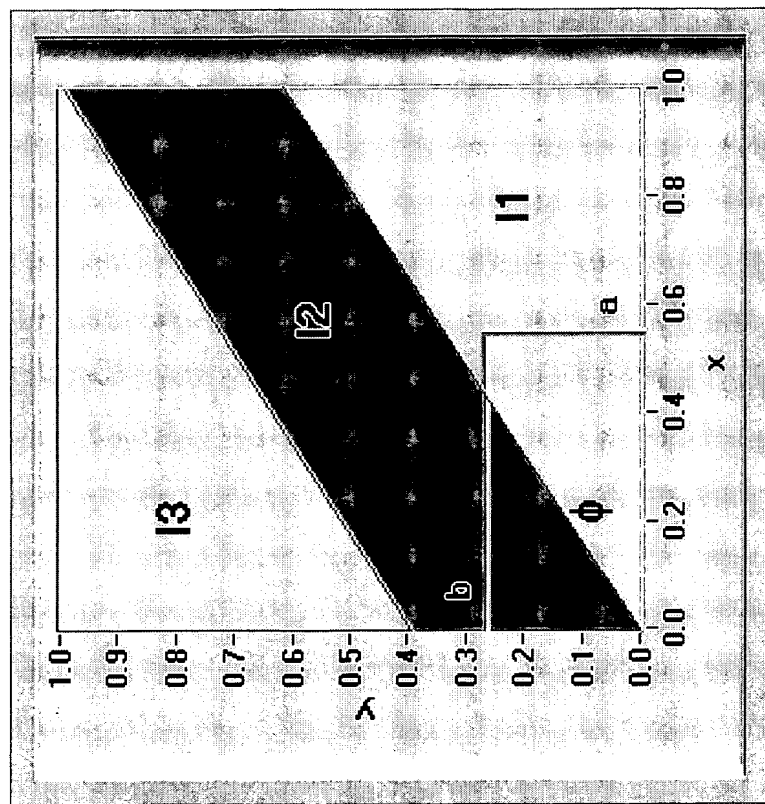


Figure 9



Definition of I_1 , I_2 , and I_3

Figure 10

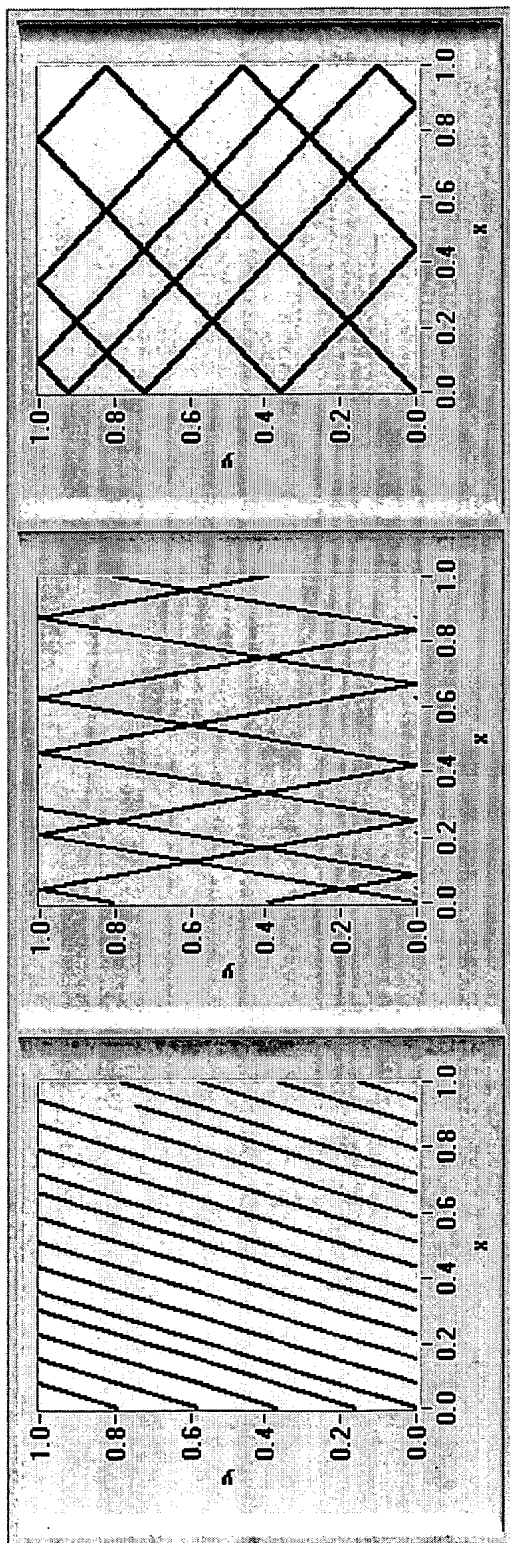


Figure 11A

Figure 11B

Figure 11C

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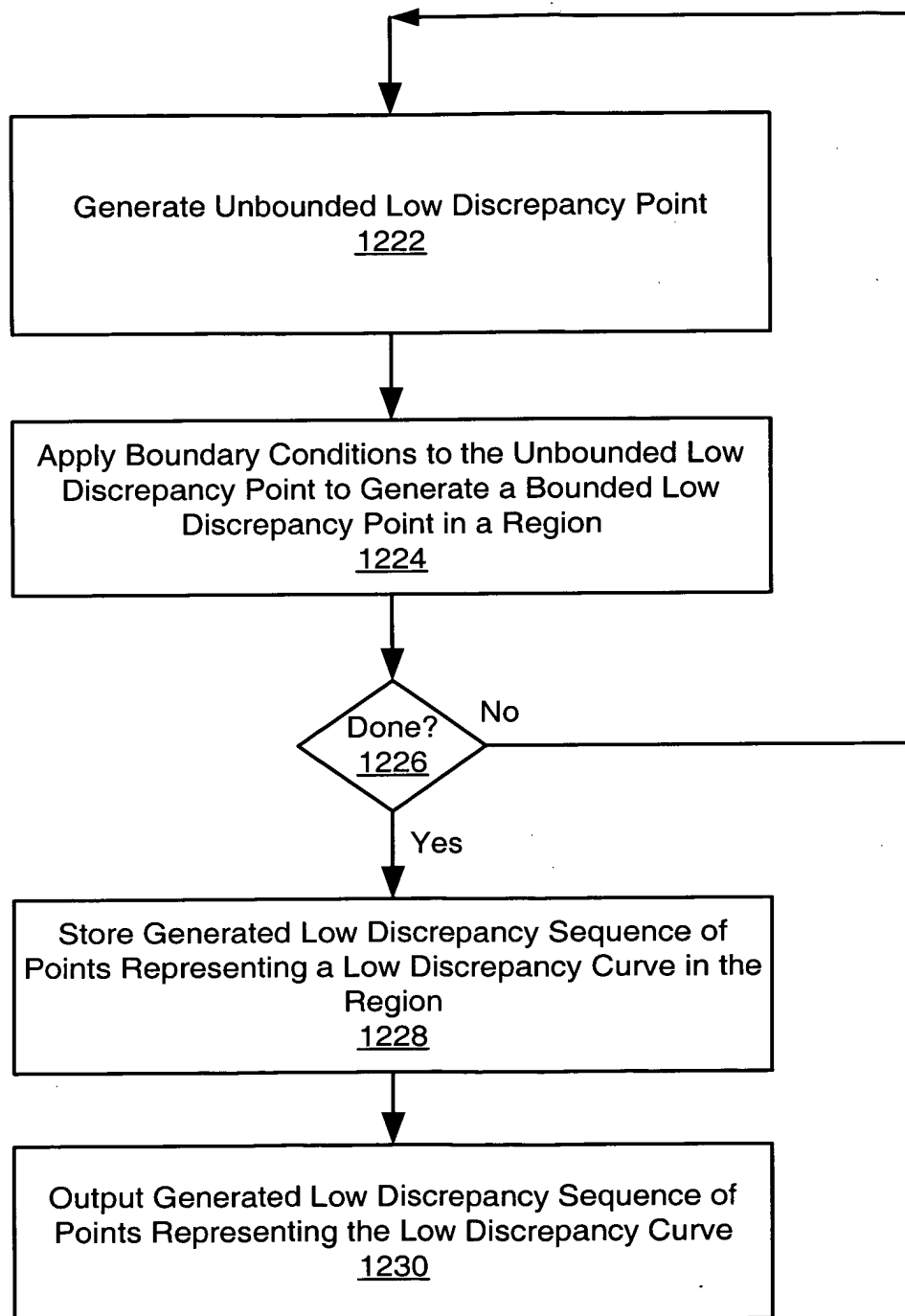


Figure 12A

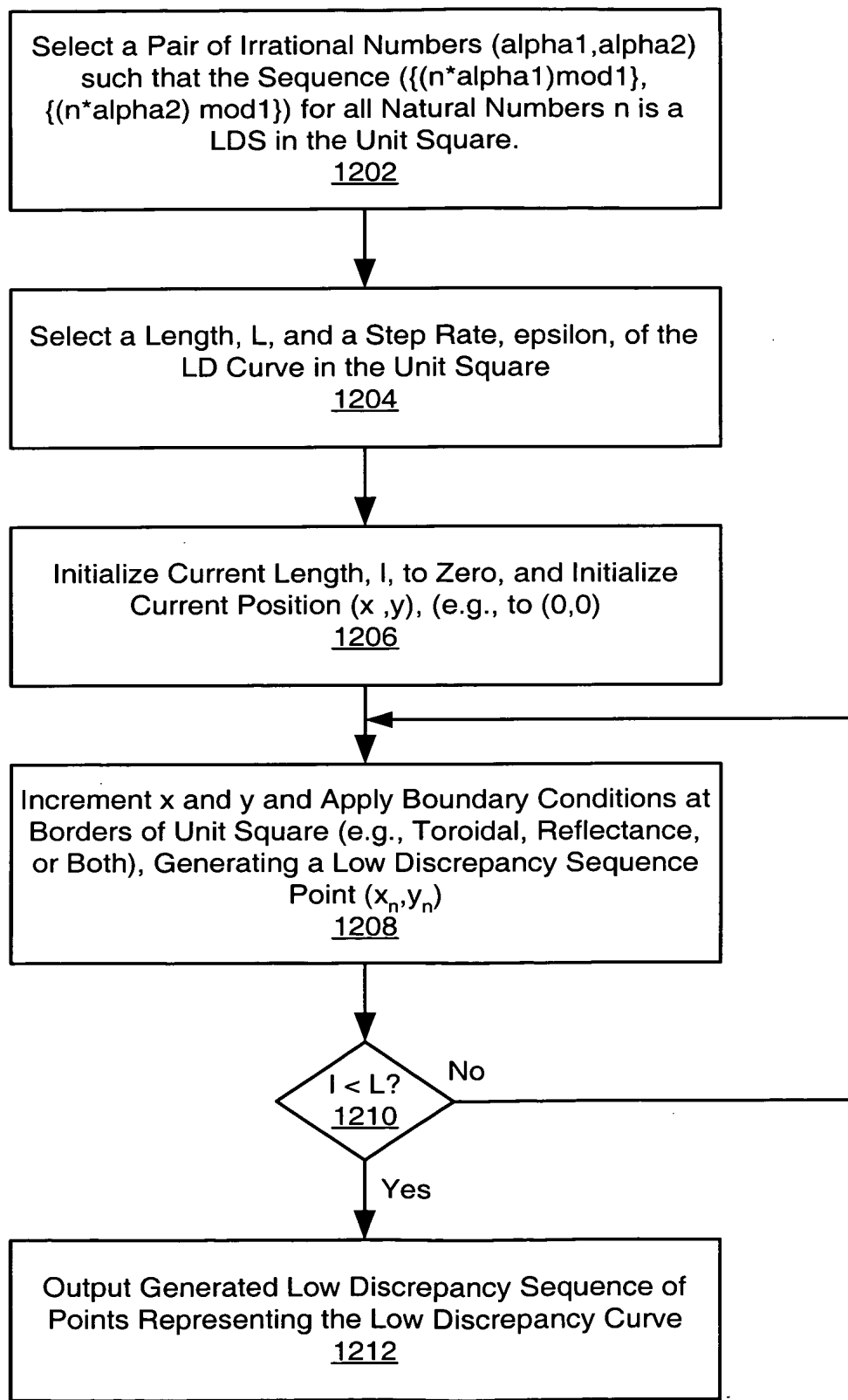
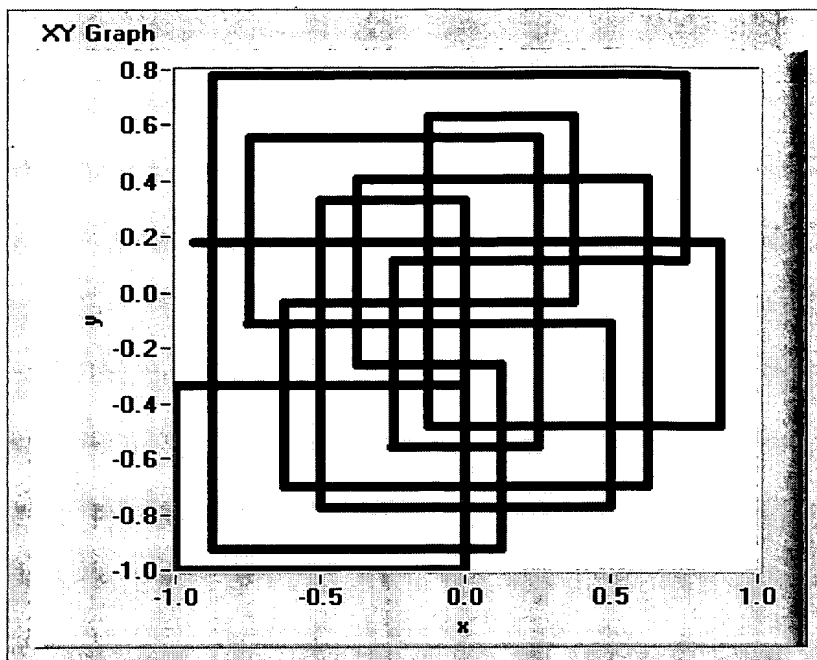


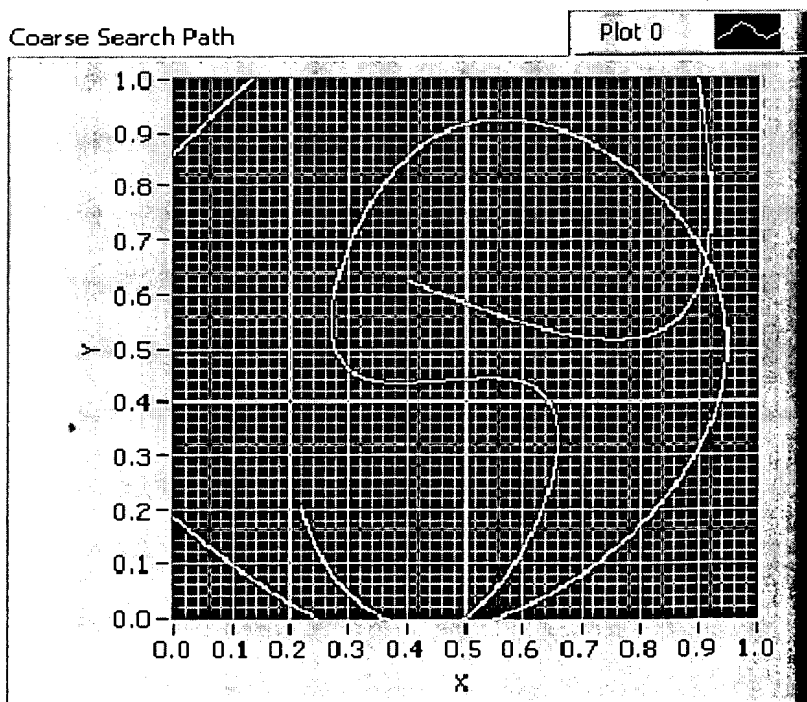
Figure 12B

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Beginning of a Low Discrepancy Curve based on a specific Halton Sequence in 2d

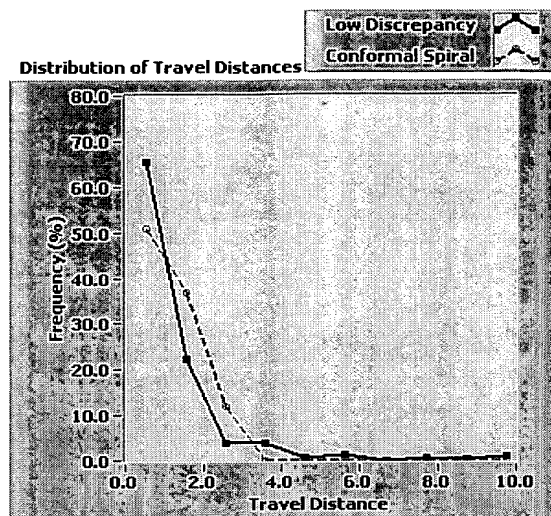
Figure 13A



Splined Low Discrepancy Curve coarse search

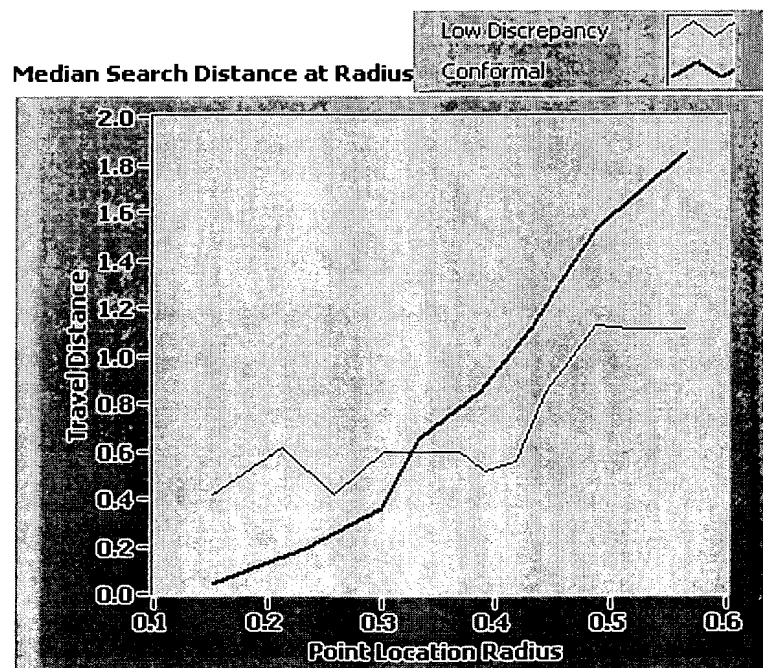
Figure 13B

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Comparison of Conformal Spiral and Low Discrepancy Searching

Figure 13C



Comparison of Travel Distance for Low Discrepancy Search and Conformal Spiral Search

Figure 13D

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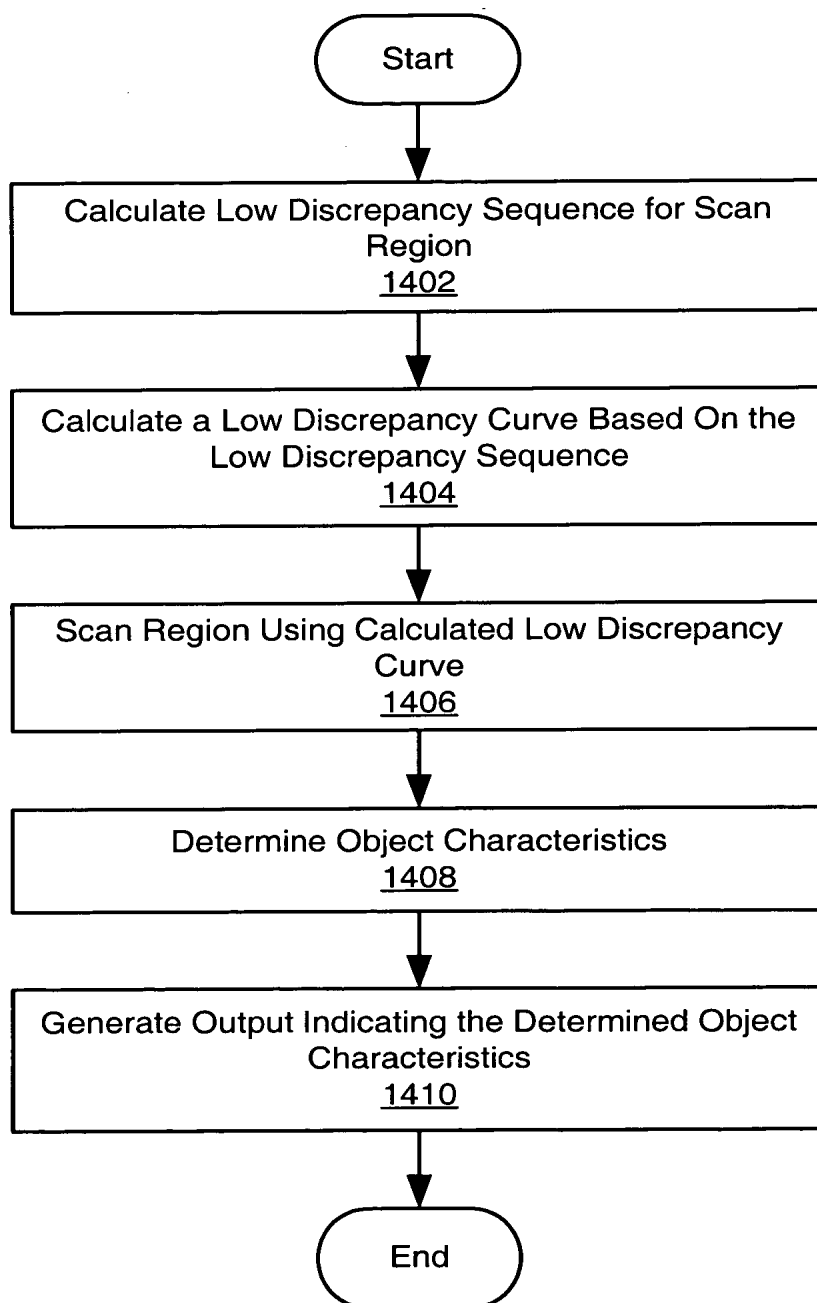
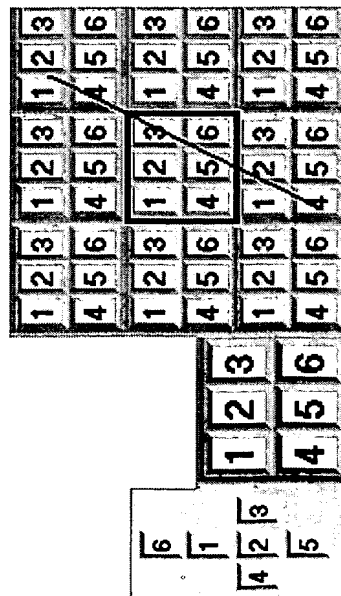


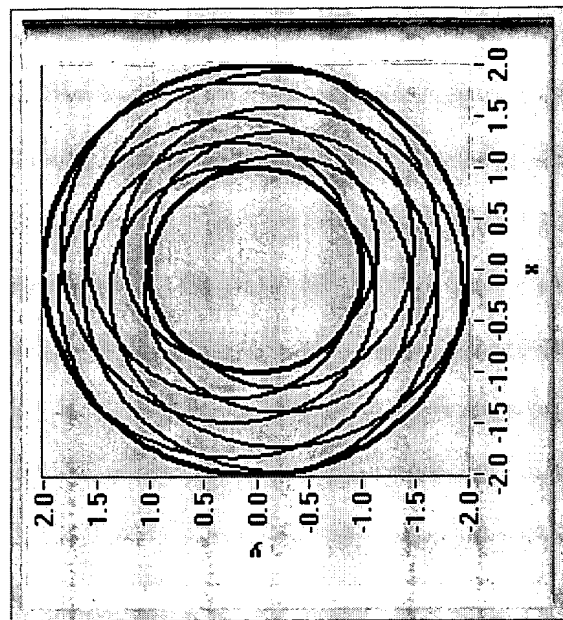
Figure 14

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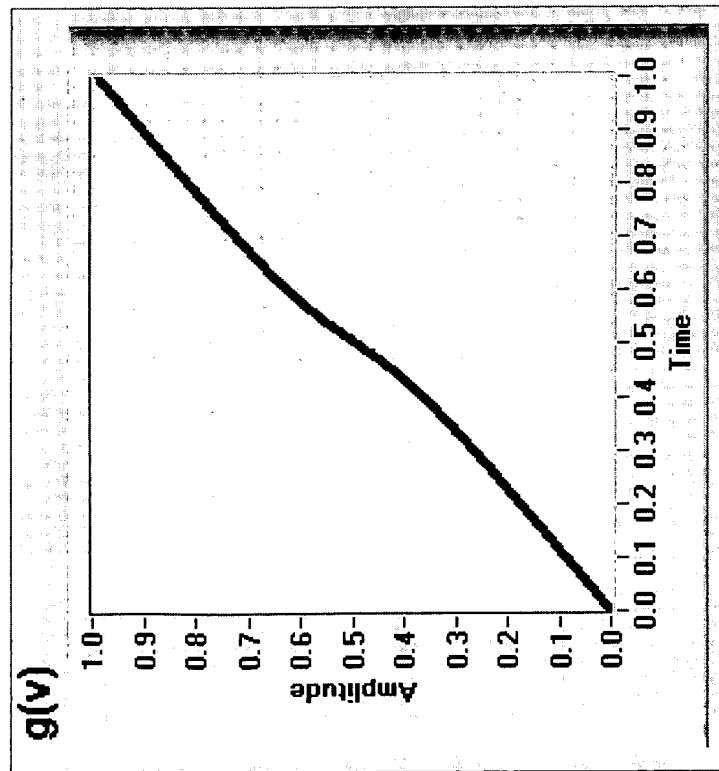
Tiling of the plane and relation to the surface of the unit cube

Figure 15A



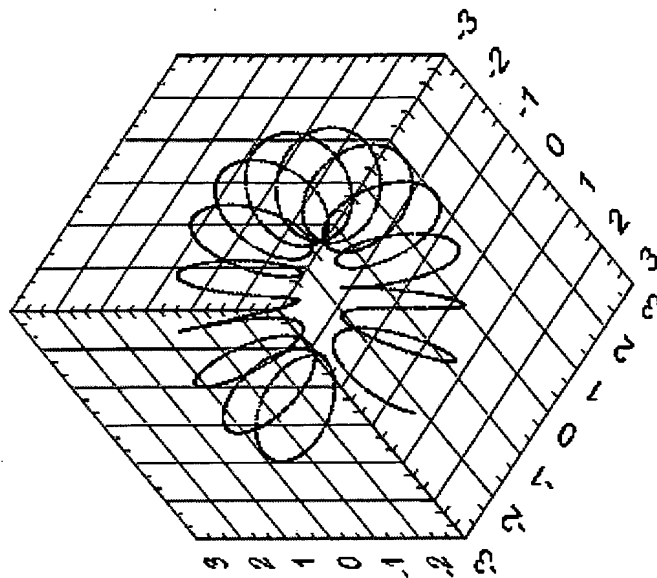
Low-discrepancy curve in a ring

Figure 15B



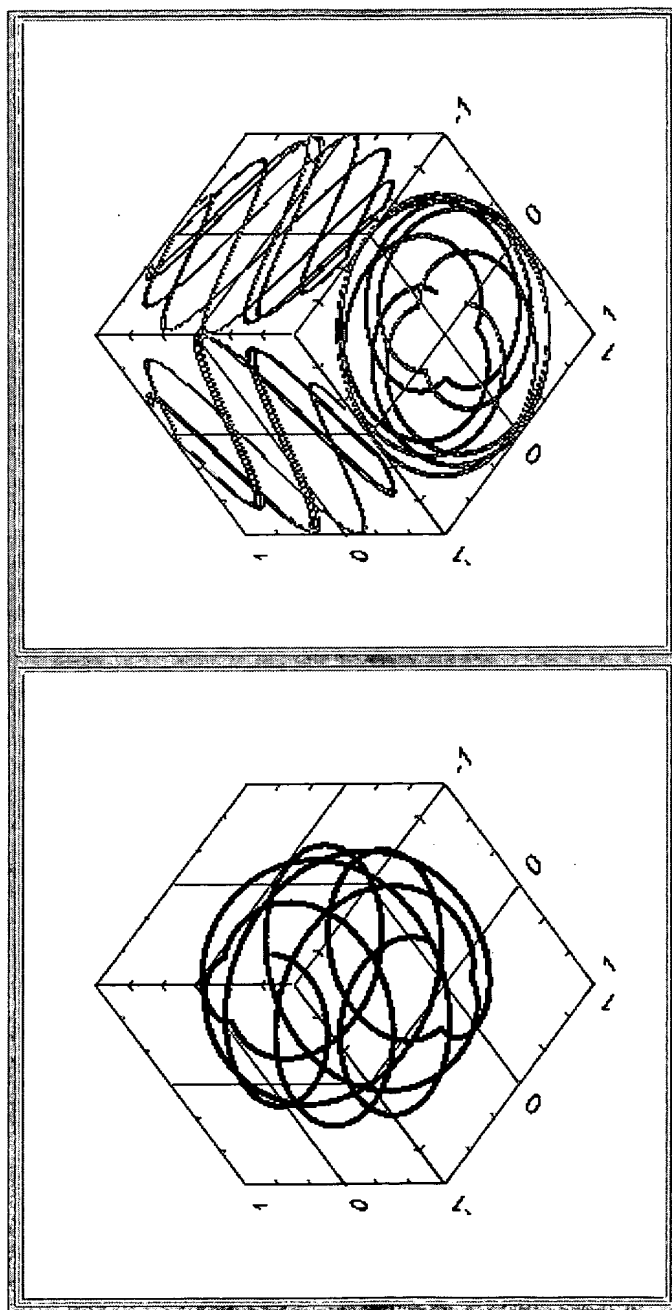
Low Discrepancy Preserving Mapping Function

Figure 15C



Low-discrepancy curve filling the surface of a torus

Figure 15D



Low-discrepancy curve on a sphere
(left) and projections (right)

Figure 16

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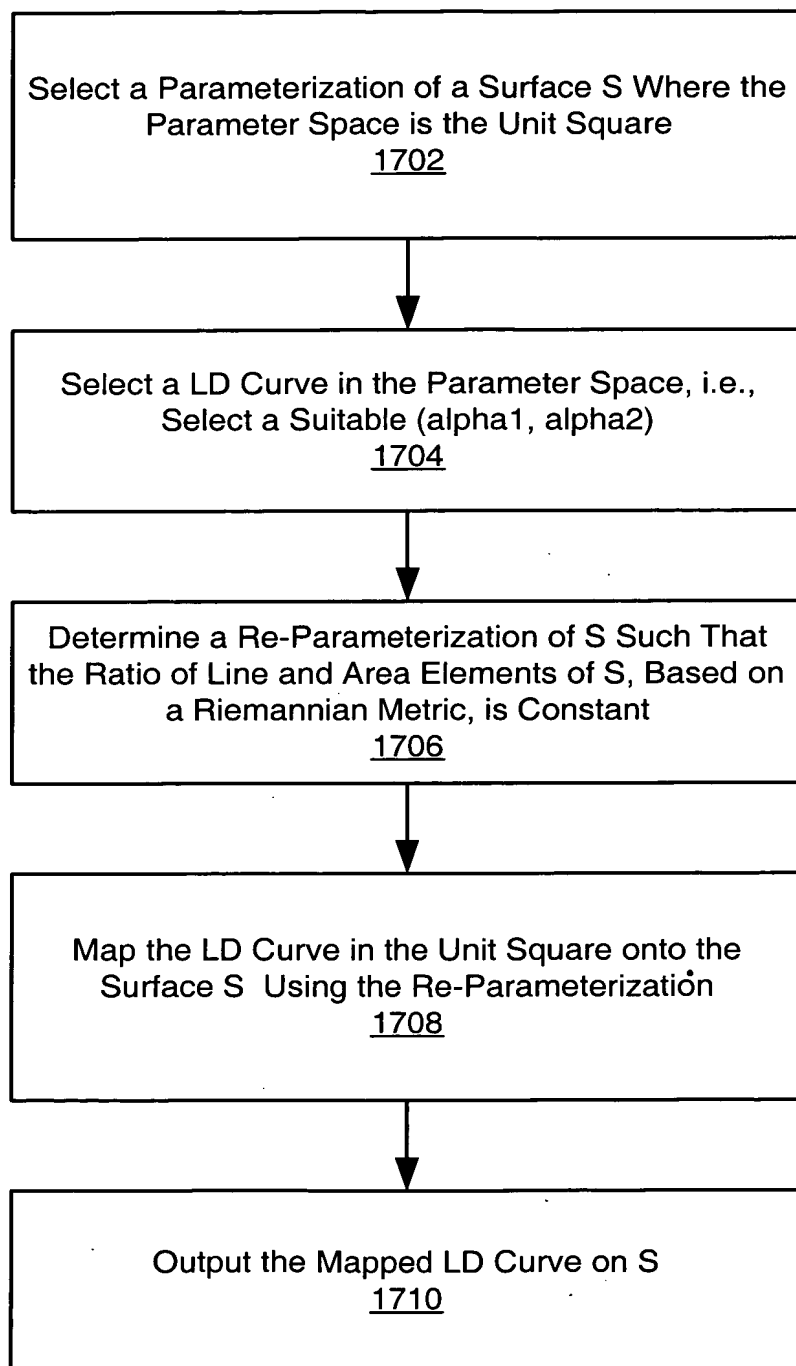
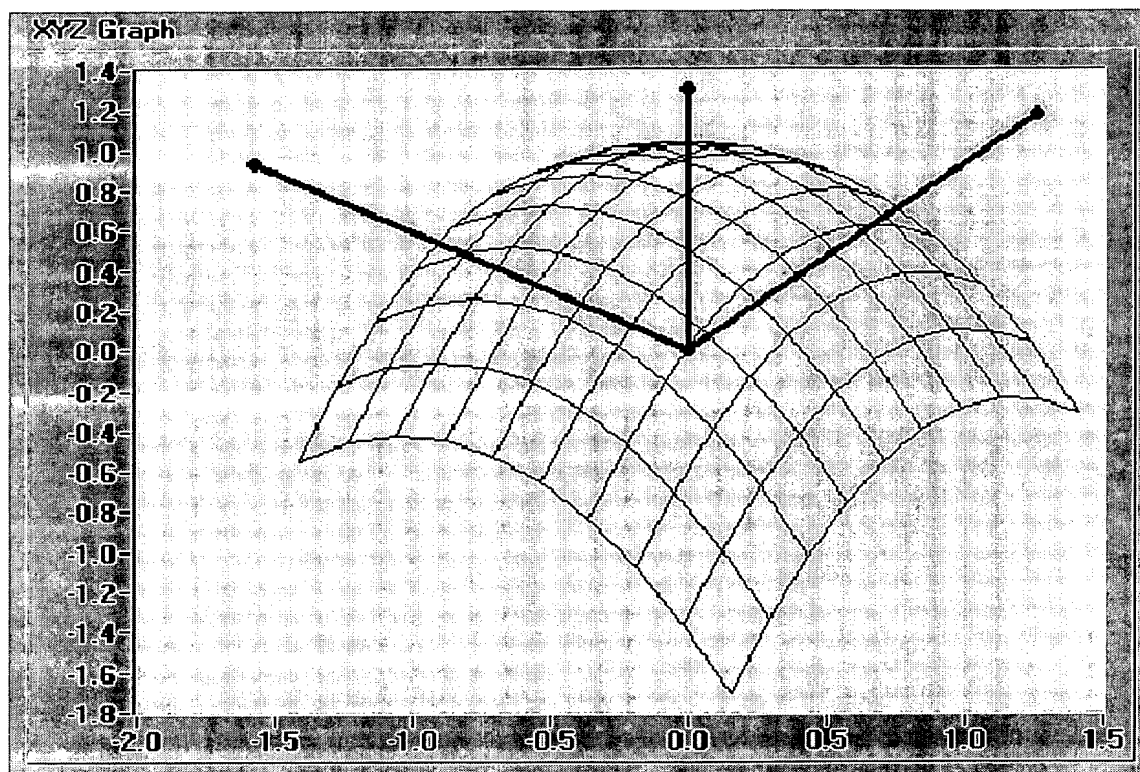


Figure 17

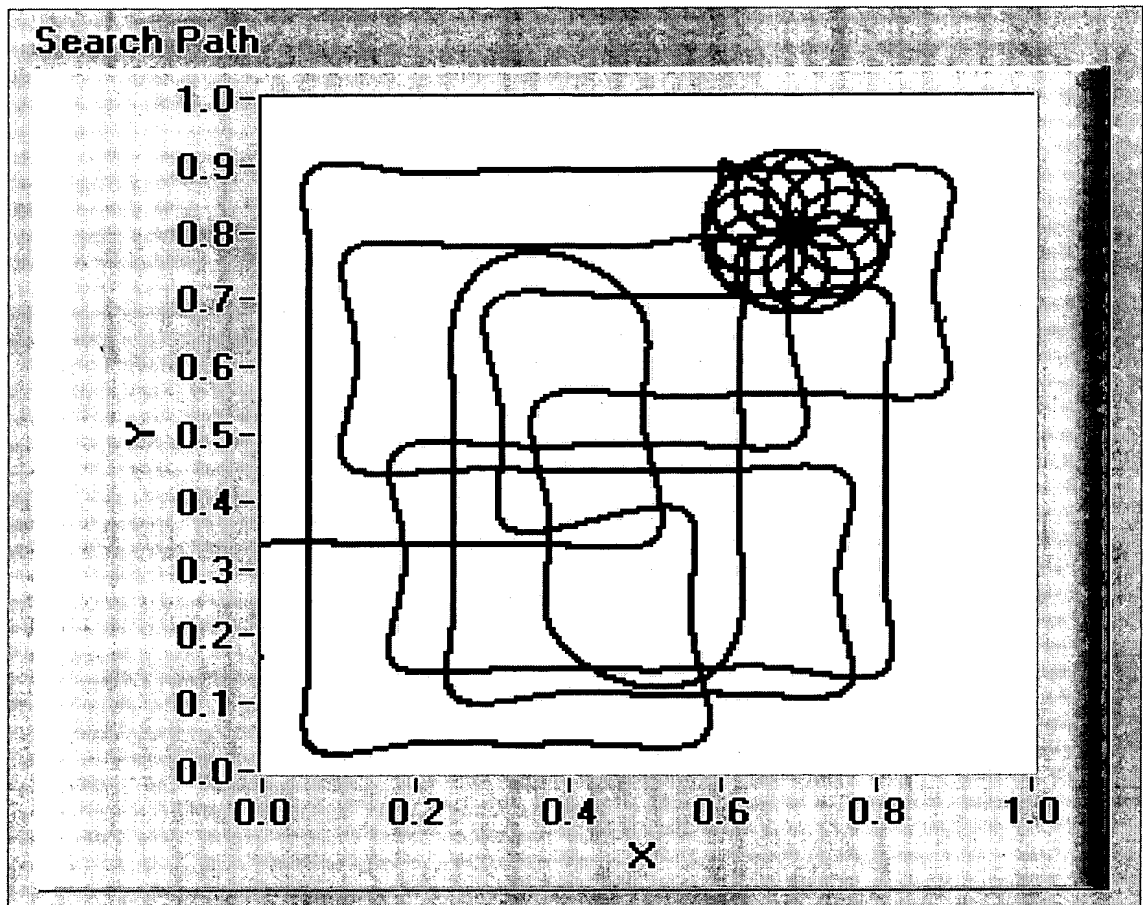
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Surfaces can be scanned efficiently when the term low discrepancy sequence/ curve can be generalized, e.g. based on metrics on the surface.

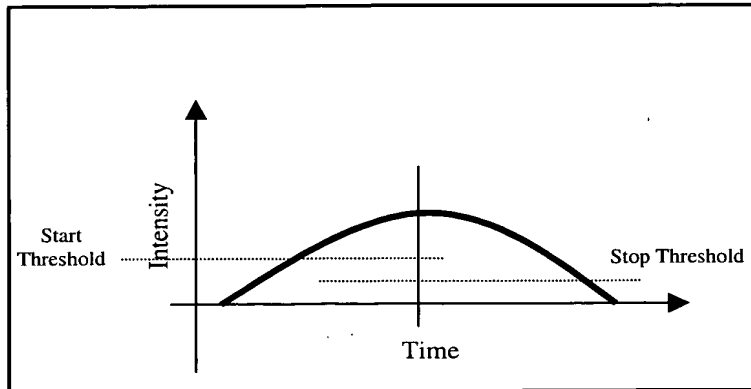
Figure 18

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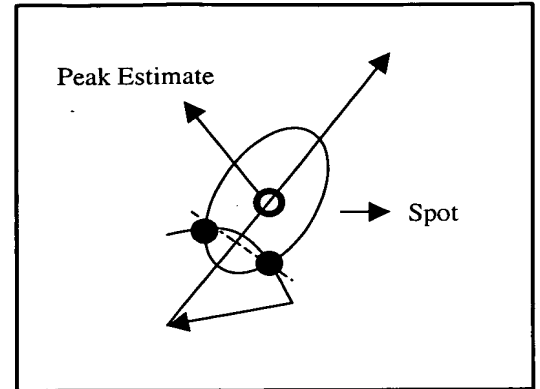


Splined Low Discrepancy Curve coarse search with refined final approach

Figure 19



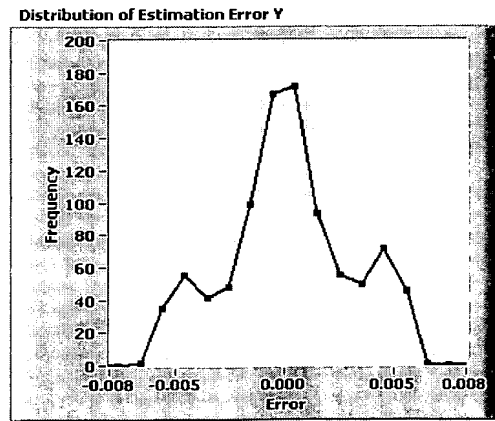
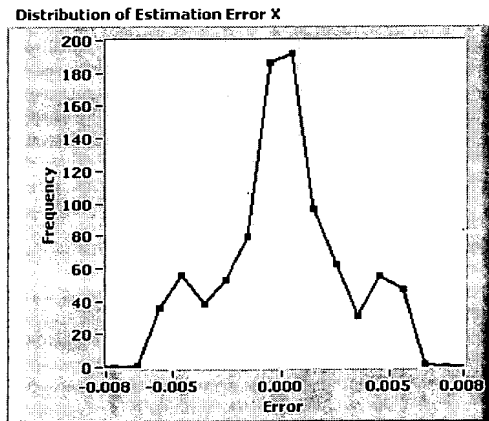
Location of the Peak



Initial Final Approach Move

Figure 21A

Figure 21B



Error distribution of the estimated peak X coordinate error (left) and Y coordinate error (right)

Figure 21C

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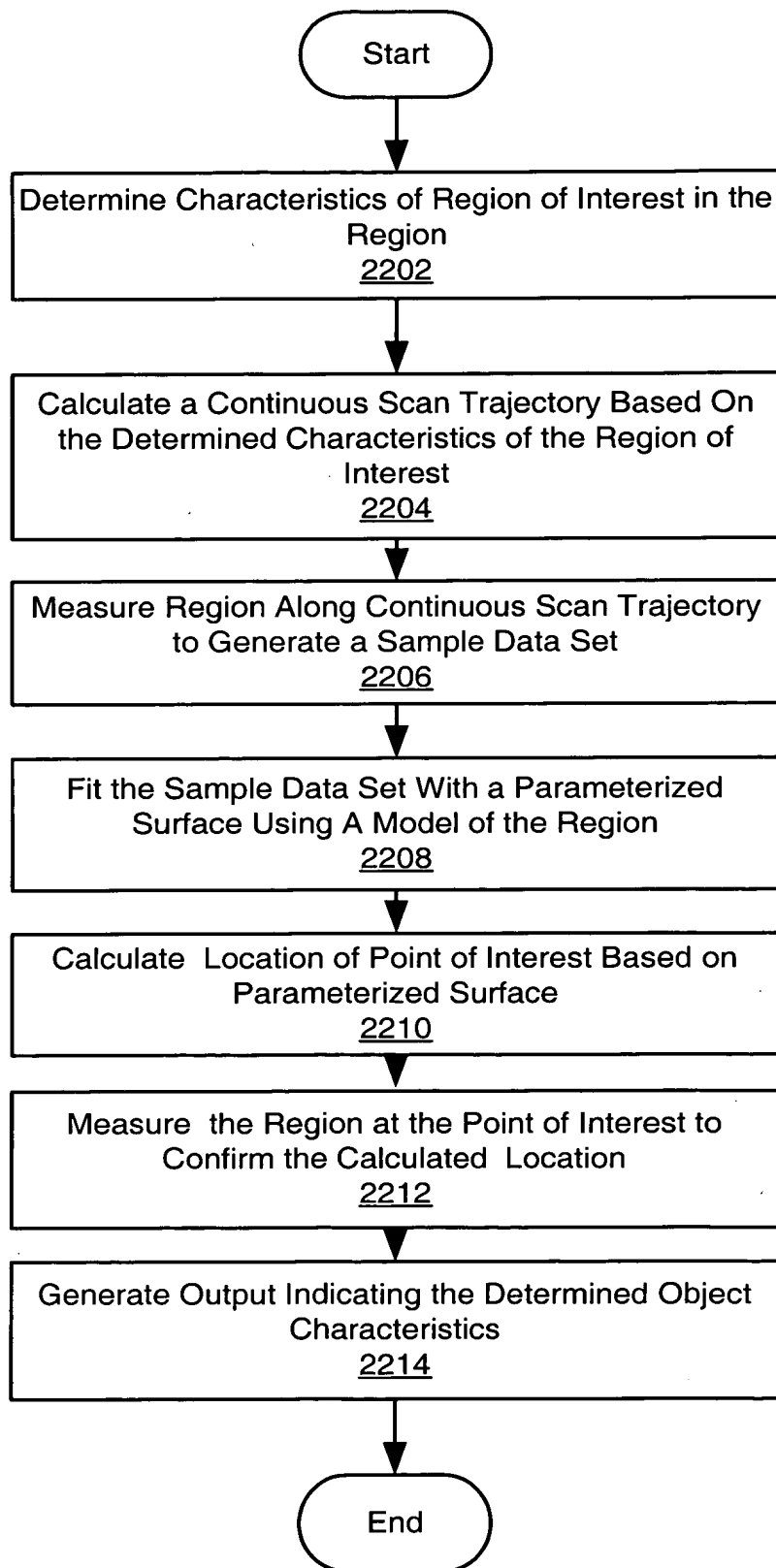


Figure 22

Start

Scan Region to Determine An Entry Point and An Exit Point of the Region of Interest
2302

Determine First Local Point of Interest By Scanning Along First Scan Line Between Entry and Exit Points
2304

Calculate Second Scan Line Passing Through First Local Point of Interest and Orthogonal to First Scan Line
2306

Scan Along Second Scan Line to Generate Second Scan Line Measurement Data
2308

Determine Second Local Point of Interest Along Second Scan Line Based on Second Scan Line Measurement Data
2310

Determine Approximate Center of the Region of Interest Based on First and Second Points of Interest
2312

End

Figure 23